Write your name here

Surname	Other names

Edexcel GCE

Centre Number | Candidate Number

Music Technology

Advanced
Unit 4: Analysing and Producing

Thursday 31 May 2012 – Afternoon
Time: 2 hours (plus 10 minutes setting up time)

Paper Reference
6MT04/01

You must have: CD ROM containing component audio files, blank CD for burning finished mixes, headphones or monitor speakers, computer workstation and music production software. Insert for question 4(b).

Total Marks

Setting up time

1. Open a new project in the music production software using 16 bit/44.1kHz sample rate.
2. Save the project as **'unit4_your candidate number' (e.g. *unit4_1234*)** in the folder designated by your centre.
3. Set the metronome to **110**.
4. Import "bass.wav" from the CD ROM to a **mono** audio track in the music production software, aligned with the beginning of bar 1.
5. Ensure that the bass is audible and plays in time with the metronome. The music begins in bar 2.

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Write your answers to Section A in the spaces provided in this question paper.
- Save your audio files for Questions 2 & 3 in Section A, and Question 5 in Section B to your project folder within the 2 hour examination time.
- You must ensure that the left and right earpieces of your headphones are worn correctly.
- Access to the internet or local network is **not** permitted.

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
  – use this as a guide as to how much time to spend on each question.
- Questions labelled with an **asterisk** (*) are those where the quality of your written communication will be assessed
  – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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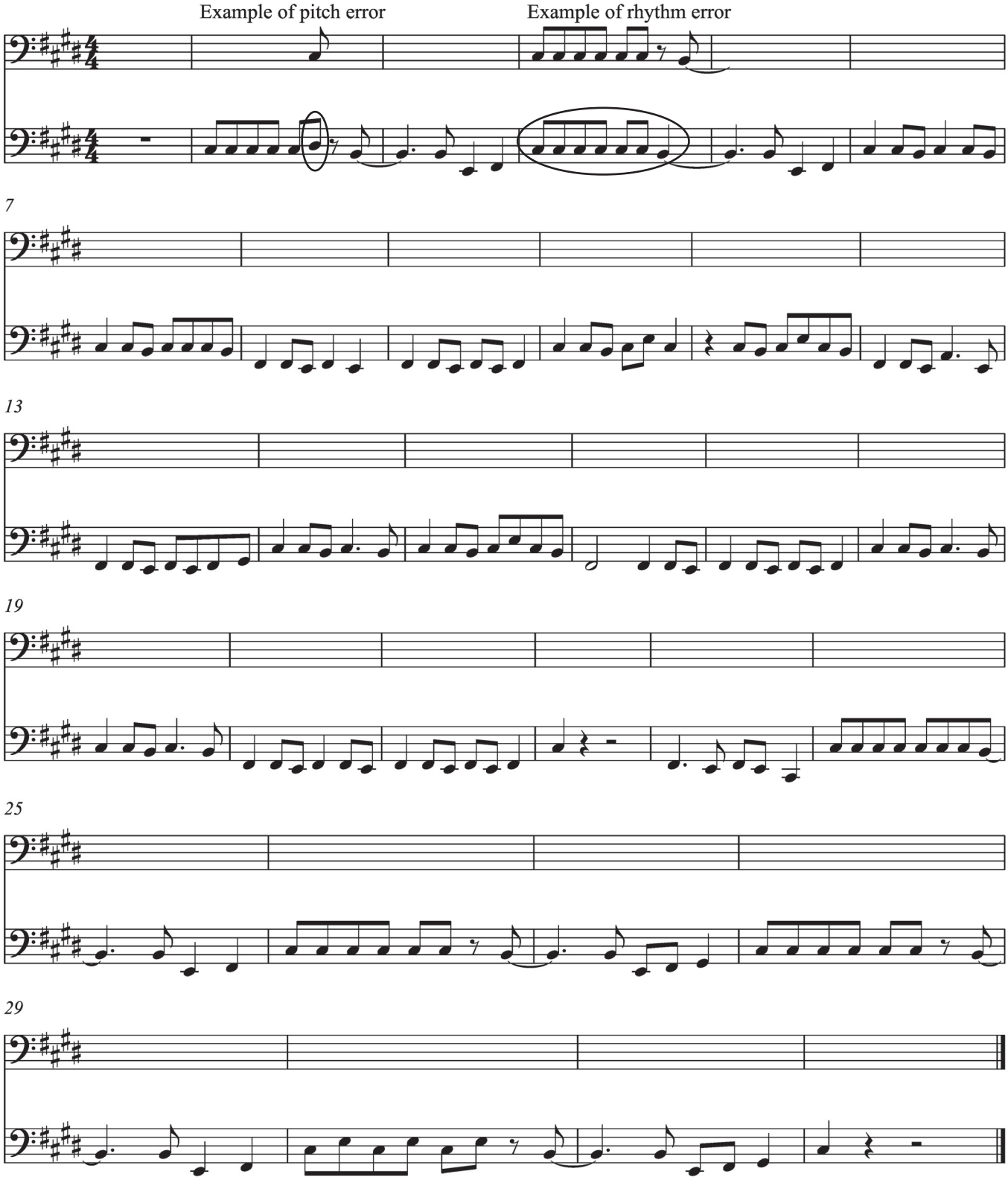
PEARSON

SECTION A

Answer ALL questions.

Write your answers in the spaces provided or, where appropriate, choose an answer and put a cross in the box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Listen to the bass part that you have imported and compare it with the score below.

(a) What key is the music in?

(1)

.....

(b) Between **bars 6–18** there are **two** pitch errors in the score. An example of a pitch error is given in bar 2.

- Identify the **two** pitch errors. Circle each incorrect pitch.
- Notate each correct pitch on the blank stave above.

(4)

(c) Between **bars 6–18** there are **two** rhythm errors in the score. An example of a rhythm error is given in bar 4.

- Identify the **two** rhythm errors. In each case, circle the **entire bar**.
- Notate each correct rhythm for the **entire bar** on the blank stave above.

(4)

(d) Quantise has been used on this bass part to tighten the rhythm. Identify the most appropriate quantise value for this part. Put a cross in the correct box.

(1)

- ☒ **A** 1/16
- ☒ **B** 1/12
- ☒ **C** 1/8
- ☒ **D** 1/4

(e) The use of quantise can make a performance sound mechanical. Describe a quantising method that can tighten the rhythm whilst preserving some of the natural feel.

(3)

.....

.....

.....

(f) In **bars 30–31** of the audio file, the bass part has been transposed incorrectly. Using appropriate processing, correct the bass part so that it plays the pitches indicated in the score.

(4)

Solo the completed bass part. Turn off the metronome click. There should be no added effects on the bass other than those used to correct the pitch in question 1(f).

Bounce/export the completed bass part as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.

Name it 'task1_ your candidate number' (e.g. *task1_1234*).

(Total for Question 1 = 17 marks)

2 Import "drums.wav" from the CD ROM to a new **stereo** track in your music production software. Ensure that the beginning of this audio track is aligned with the start of bar 1. The drums begin playing in bar 2.

Import "distorted guitar.wav" from the CD ROM to a new **stereo** track in your music production software. Ensure that the beginning of this audio track is aligned with the start of bar 1. The guitar begins playing in bar 2.

(a) This guitar was recorded using an electric guitar with a single coil pick-up. What problem has this created?

(1)

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(b) Which type of pick-ups can reduce this problem? Describe how they work.

(4)

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.....

(c) Using appropriate production and editing tools, remove unwanted noise from the distorted guitar part.

(4)

Import "guitar1.wav", "guitar2.wav" and "guitar3.wav" from the CD ROM into new **stereo** tracks in your music production software. These samples will be used to form a complete electric guitar part for the verse.

(d) Use a new **stereo** track for the verse electric guitar part.

"guitar1.wav" is the correct length and fits exactly into two bars. However, "guitar2.wav" is slightly too long because there is a silence at the start and an extra chord on the end which cuts off. Trim "guitar2.wav" so that it loops accurately over two bars without audible clicks. The first chord should start on the first beat of the bar.

(3)

(e) Assemble the verse electric guitar part by copying and pasting together your edited samples as shown in the table below. The part should remain in time with the drums and bass.

Bar Range	Sample
6–7	guitar1
8–9	guitar2
10–11	guitar1
12–13	guitar2
14–15	guitar1
16–17	guitar2
18–19	guitar1
20–21	guitar2
22	guitar3

(3)

(f) Identify the guitar pedal used in the verse for the electric guitar part. Describe how it works.

(4)

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.....

(g) Stereo automatic double tracking has been added to the guitar parts throughout. Describe how this effect has been achieved in this recording.

(4)

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.....

.....

.....

Solo <u>both</u> the completed distorted and verse electric guitar parts. Turn off the metronome click and bypass any effects.

Bounce/export the completed guitar parts for the <u>entire song</u> as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.

Name it 'task2_ your candidate number' (e.g. *task2_1234*).

(Total for Question 2 = 23 marks)

3 Import "vocal.wav" from the CD ROM to a new **mono** track in your music production software. Ensure that the beginning of this audio track is aligned with the start of bar 1. The singing begins in bar 2.

Complete the table below to describe how you would mic a singer to achieve a similar recording to that heard in "vocal.wav". Give reasons for your choices. An example is provided for you.

	What you would choose	Reasons for choice
Microphone distance	10-30 cm	• Less reverb • Less background noise
Microphone type	**(1)**	**(2)**
Microphone polar pattern	**(1)**	**(2)**

(Total for Question 3 = 6 marks)

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4 Answer EITHER Question 4(a) or 4(b). You are advised to keep your answer to a maximum of 250 words. You may write in continuous prose, bullet points or use a table to communicate your answer.

Indicate which question you are answering by marking a cross in the box ☒.
If you change your mind, put a line through the box ☒
and then indicate your new question with a cross ☒.

Question 4(a) ☒ **Question 4(b)** ☒

EITHER

*(a) Distortion is used on the electric guitar to modify the tone and increase sustain. Explain what distortion is. Describe the various ways that distortion has been added to the electric guitar from the 1950s to the present day.

OR

*(b) On the insert provided, the picture shows a tape delay processor from the 1970s that is used to create echo effects. Many of the controls are similar to those of a software delay plug-in. Describe how a tape delay works and explain the function of the controls seen in the picture. Identify the benefits of using a software delay plug-in rather than 1970s tape technology.

(Total for Question 4 = 16 marks)

TOTAL FOR SECTION A = 62 MARKS

SECTION B

5 You should now have the following tracks imported on the computer:
electric guitar, drums, vocal and bass.

Follow the instructions below to produce a final stereo mix.

(a) Apply EQ to one phrase of the **vocal** track.
- Only the second phrase of the verse, *"or is the addiction something else"* should be affected.
- Use appropriate EQ and/or filtering to give the vocal a telephone effect.

(3)

(b) Compress the **vocal** track.
- The compression should suit the style of the music.
- Ensure that all parts of the vocal can be heard above the other parts.
- Ensure that the dynamics of the performance are controlled and do not jump out of the mix.
- Do not over compress the vocal.

(3)

(c) Apply automated panning to the repeats in the **vocal** part.
- Only **bars 22–23** should be affected; all other bars should be panned to the centre.
- **Bar 22** should be panned hard left.
- **Bar 23** should be panned hard right.

(3)

(d) Apply reverb to **each** of the four tracks.
- Use a 1.5 second reverb time.
- The reverb should not be intrusive.
- The vocals should have more reverb than the instrumental parts.

(3)

(e) Balance the mix.
- The balance should suit the style of the music.
- Ensure that all tracks can be heard clearly.

(3)

(f) Produce a final stereo mix.
- Ensure that the mix output is at as high a level as possible.
- It should be free from distortion.
- **Do not** limit or compress the mix output.
- Ensure that the beginning of the music and the reverb tail are not cut off.
- Ensure that silences at the beginning and end do not exceed **one** second.

(3)

Turn off the metronome click.

Bounce/export the completed mix as a single 16 bit/44.1kHz stereo .wav file to the designated folder on your computer.

Name it 'task3_ your candidate number' (e.g. *task3_1234*).

(Total for Question 5 = 18 marks)

TOTAL FOR SECTION B = 18 MARKS
TOTAL FOR PAPER = 80 MARKS

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